

### **REMARKS/ARGUMENTS**

Reconsideration and allowance in view of the following remarks are respectfully requested.

At the outset, it is noted that an Information Disclosure Statement was filed on January 16, 2009. Consideration of the Information Disclosure Statement and return of an initialled and dated copy of the art listing that accompanied the same is respectfully requested.

Claims 1, 4, 5, 7 and 23-25 were rejected under 35 USC 103(a) as being unpatentable over Stadler in view of Le Roux. Applicant respectfully traverses this rejection.

Stadler relates to recording and analysing electrograms (EGM) for detection of ischemia using directional electrodes arranged with orthogonal sensing axis. Accelerometer sensors are disclosed as examples by the incorporation by reference of Mouchawar and Moberg.

In paragraph twelve (page 4) of the final Office Action, the Examiner acknowledges that Stadler does not disclose determining a frequency distribution of the recorded acceleration signal. Applicant notes that, as a consequence, Stadler also fails to disclose comparing such determined frequency distribution with a reference frequency distribution recorded previously.

In section 13 of the final Office Action, the Examiner suggests that it would have been obvious for one having ordinary skill in the art to apply the teachings of Le Roux related to carrying out a harmonic analysis of successive MR images to the Stadler system.

Applicant respectfully disagrees as to the obviousness of such a combination, and as to the form of the rejection in general.

In order to maintain a rejection, the Examiner has the burden of providing evidence of prima facie obviousness, see e.g. MPEP 2143 and In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). To establish a prima facie case of obviousness:

1. there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings;
2. there must be a reasonable expectation of success; and
3. the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure.

In the final Office Action, the Examiner fails to meet the above criteria 1, 2 and 3 for establishing a prima facie case of obviousness.

**1. No suggestion or motivation to modify or combine**

There is no suggestion or motivation, either in Stadler, Le Roux, or in the knowledge generally available to one of ordinary skill in the art, to modify the Stadler system related to signals from piezoelectric motion sensors placed on the heart to apply a harmonic analysis which is only described in relation motion detected by comparing successive MR images.

The field of motion sensors placed on the heart is totally unrelated to and remote from the field of comparing successive MR images.

There is no mention in either Stadler or Le Roux that suggests or motivates the combination of these unrelated references. Since the person skilled in the art of placing motion sensors on the heart is typically a cardiologist with expertise in performing

open-chest surgery, and since analysis of MR images are most often carried out by MR physicists, it would not be obvious for one of ordinary skill in the art of Stadler to undertake this combination.

## **2. No reasonable expectation of success**

The output from a 3D piezoelectric motion sensor is three electric signals, each similar to those shown in the top graphs of Figures 1 and 2 of Moberg. The amplitude indicates the direction (along one dimension) and magnitude of the acceleration of the sensor. These signals do not directly indicate either speed or position of the sensor.

It is not disclosed in Le Roux how the harmonic analysis could be applied to the electric signals from the Stadler system. Since these electric signals are of such a different nature from a series of successive MR images, it can not be expected that the harmonic analysis of the successive images in Le Roux would yield applicable results if applied on signals from motion sensors placed on the heart.

## **3. Not all claim limitations are taught**

Neither Stadler nor Le Roux discloses the claim limitations:

- a. Determining a frequency distribution of a recorded acceleration signal. In this regard, the Examiner says that a frequency distribution is determined in Le Roux, but the claim explicitly specifies that, according to the invention, the frequency distribution must be of a recorded acceleration signal.
- b. Comparing a determined frequency distribution with a reference frequency distribution recorded previously. In this regard, the Examiner has not referred to any disclosure of this claim limitation.

For all the reasons advanced above, reconsideration and withdrawal of the Examiner's rejection based on Stadler and Le Roux is requested.

Claims 2 and 3 were rejected under 35 USC 103(a) as being unpatentable over Stadler and Le Roux in view of Matsumoto. Applicant respectfully traverses this rejection.

Claims 2 and 3 are submitted to be patentable over Stadler and Le Roux for the reasons advanced above. The Examiner's further reliance on Matsumoto does not overcome the deficiencies of the primary combination noted above. Reconsideration and withdrawal of the rejection are requested.

Claim 6 was rejected under 35 USC 103(a) as being unpatentable over Stadler and Le Roux in view of Dickinson. Applicant respectfully traverses this rejection.

Claim 6 is submitted to be patentable over Stadler and Le Roux for the reasons advanced above. The Examiner's further reliance on Dickinson does not overcome the deficiencies of the primary combination noted above. Reconsideration and withdrawal of the rejection are requested.

Claim 8 was rejected under 35 USC 103(a) as being unpatentable over Stadler and Le Roux in view of Hess. Applicant respectfully traverses this rejection.

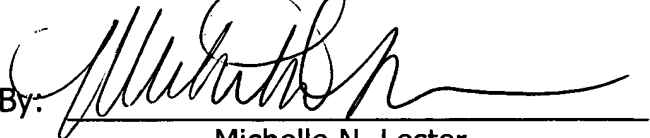
Claim 8 is submitted to be patentable over Stadler and Le Roux for the reasons advanced above. The Examiner's further reliance on Hess does not overcome the deficiencies of the primary combination noted above. Reconsideration and withdrawal of the rejection are requested.

ELLE et al  
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All objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance and an early Notice to that effect is earnestly solicited.

Respectfully submitted,

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